THE AUSTRALIAN NATIONAL UNIVERSITY

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NEWS

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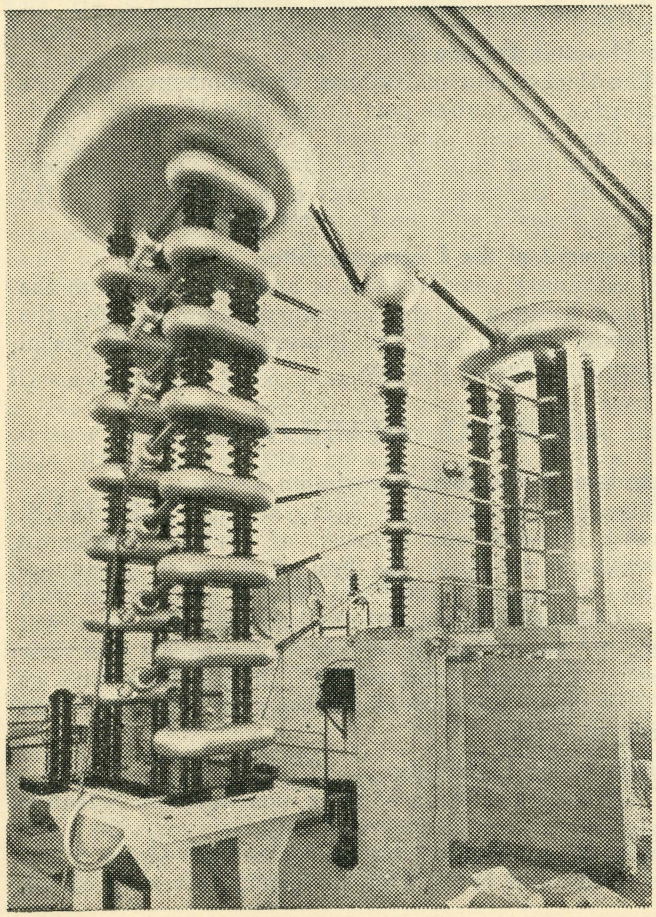
PROGRESS IN THE RESEARCH SCHOOL OF PHYSICAL SCIENCES

The Research School of Physical Sciences will have two accelerating machines with which to carry out research in Nuclear Physics. The first of these machines has recently been erected and brought into operation. The accompanying photograph gives an idea of the size of the installation which stands in a building 60ft. long by 40ft. wide by 40ft. high.

The equipment comprises three main parts. In the foreground stands a high voltage generator capable of developing a voltage of over 1¼ million volts. It is of a type which was developed by Sir John Cockcroft and Professor Ernest Walton, work for which they received the Nobel Prize in Physics for 1951. The high voltage generated at the top terminal of this generator still has ripple which is reduced by means of a smoothing condenser stack seen in the centre of the picture. The smoothed voltage at the top terminal of the condenser stack is supplied through a limiting resistor to the third part of the machine which is the accelerator section of the installation. Underneath the high voltage terminal of this section a vertical accelerating tube is erected to the top end of which the smoothed high voltage is applied. A specially designed source, located at the top of this accelerating tube, manufacturers bombarding particles, hydrogen nuclei, deuterium nuclei or other nuclei which are injected into the accelerating tube and shot downwards under the influence of the high voltage. These bombarding particles are led through a concrete shield into the target room where they are used to make the nuclear disentegrations which are to be studied.



The equipment, which was manufactured in the Netherlands by the Philips Company following consultations with Professor Titterton, was shipped in September and arrived in Canberra in November last year. Erection of the machine started early in December and the high voltage generator was completed and tested on December 18th, 1951. In these tests the generator delivered over 1¼ million volts. After the acceptance tests had been completed the filter section was built and the accelerating tube erected. The first acceleration of charged particles was achieved on Friday, January 11th, when the complete machine was operated at half a million volts and gave a beam current of 70 microamperes. By Saturday this had been improved to 600 kilovolts and 140 microamperes and on Monday, January 14th, the first nuclear reaction was observed. It was made by bombarding Lithium with protons of half a million volt energy when gamma rays having an energy equivalent to 17 million volts are generated. These gamma rays were detected by a Geiger Counter. In the succeeding days the machine was slowly run up in voltage and the beam current was improved by sundry adjustments until by January 28th, the equipment had been run at over 1 million volts with a beam current of 300 microamperes. In the following week the first nuclear physics experiment was done with the machine when photographic plates were irradiated with 6 million volt Fluorine gamma rays obtained by bombarding a thick Fluorine target with protons of nearly 1 million volts energy. At this stage the laboratory had to be closed for three weeks to allow final building jobs,

such as floor coverings, installation of the final electric power source and painting, to be finished.

An analysing magnet is now being added to the equipment to enable the beam, which enters the target room from above, to be deflected through 90 deg. so that it can be directed to whatever location is required within the laboratory. This job will be completed in the next few weeks and the machine will be ready for the experimental programme to be started by Easter of this year.

The machine was erected by a small group of people directed by Professor Titterton and including Messrs. Inall and Bowkett of the University Staff and Messrs. Dickson and Hornman of the Philips Staff, with extensive help from the technical and workshop staff of the Research School.

There is also progress to report on the second and much larger accelerating machine, the cyclo-synchroton. The larger part of the steel for the 1400 ton magnet has now been machined at Garden Island. The accelerator wing of the laboratory is approaching completion and it is hoped that delivery of the steel can be taken towards the middle of this year and erection of the magnet start soon thereafter.

Progress on the main laboratory has been disappointingly slow, but it is expected that at least a part of it will be taken over within the next four or five months.

STANDING COMMITTEE

The Standing Committee of the Council met on 29th February.

Installation of the Chancellor

It had been hoped that the Chancellor would be able to visit Australia in March but his commitments in England have prevented Viscount Bruce from leaving for some time, and it is now proposed that the installation of the Chancellor will take place in October. The Chancellor has booked a passage on a ship sailing from England on 17th September.

Sydney University Centenary Celebrations

The Vice-Chancellor will represent the University at the Centenary Celebrations of the University of Sydney, to be held in August. The Vice-Chancellor has also been asked to represent Harvard University at the celebrations.

Scholars' Emoluments and Superannuation

Consideration has been given to the revision of scholarship emoluments rendered necessary by recent changes in the cost of living, and it has been decided that the emoluments of scholars working in Canberra should be slightly increased and also that special arrangements should be made for those scholars who live at Brassey House. The position now is that scholars who live at Brassey House will receive free board and lodging together with an allowance of £275 per annum. The annual allowance for scholars who do not live at Brassey House will be £575. Married scholars with children will receive an additional allowance at the Vice-Chancellor's discretion in respect of their children. The Vice-Chancellor will continue to make special allowances in cases of individual hardship at his discretion.

Consideration has also been given to the possibility of assisting scholars who at the time of their appointment already have insurance commitments. Some scholars come to the University after previous employment at other Universities and have superannuation commitments of the F.S.S.U. type. It has been decided that the Vice-Chancellor may make loans to scholars in such cases on terms of repayment determined in each case.

BUILDING DEVELOPMENT

Medical Building

A contract is about to be let for the erection of the workshops for the Medical School and construction is proceeding of the temporary laboratories for the Departments of Biochemistry and Microbiology. Work has also commenced on the conversion of the basement of the Institute of Anatomy building to laboratories for the Department of Physiology.

Flats

It had originally been planned to erect a block of 24 flats on the University site, but it has been found that this proposal involved several difficulties and it has now been decided to remove this project from the building programme, at least for some time to come. Instead, flats will be erected in other parts of Canberra.

Old Hospital Buildings

The Department of National Development which has occupied a substantial part of the Old Hospital Buildings has almost completed its move to a temporary building built by the University. The major part of the Old Hospital Buildings is now available to the Research Schools and the University Library.

Development of the University Site

Preliminary consideration is now being given to the size and location of the permanent buildings for the University library and the Research Schools of Social Sciences and Pacific Studies.

GENERAL DEVELOPMENTS

Australian Automobile Association Lecture

Sir John Kemp, K.B., M.E., M. Inst. C.E., M.I.E. (Aust.), Co-ordinator-General of Public Works in Queensland, will give the first of a series of annual lectures arranged by the University in conjunction with the Australian Automobile Association. Sir John will speak on "Some Aspects of Modern Transport and their Relation to Road Construction" in the Theatrette at the Australian Institute of Anatomy on Thursday, 20th March, at 8 p.m.

Visitors to the University

Following a meeting of the *Commonwealth Scientific Conference* held in Canberra on 20th February, the Vice-Chancellor entertained the delegates and senior members of the staff in the Council Room, University offices.

SCHOLARS

Dr. Henry Harris, a University Scholar in Experimental Pathology, sailed for the United Kingdom early in March. Dr. Harris will work at Oxford and is accompanied by his wife.

Messrs. R. L. Blakely, E. C. Foulkes and *J. F. Morrison*, will attend the Biochemical Congress to be held in Paris during July.

Extensions

The following extension of scholarships have been approved:—

F. W. E. Gibson (6 months),
G. R. Hercus (12 months),
I. G. Ross (6 months).

PARTICULARS OF SCHOLARS – 1952

Research School of Social Sciences

Mr. A. Barnard (Economics), 23, graduated with first class honours in Economic History from the University of Sydney in 1950. On graduation Mr. Barnard took up an appointment as a Teaching Fellow at the University of Sydney. Mr. Barnard will study aspects of the Australian Economy between 1896 - 1914.

Mr. E. C. Fry (Economics), 30, graduated B.Ec. from the University of Sydney in 1942. In 1951 Mr. Fry was awarded his B.A. degree with first class honours in history. Mr. Fry served with the R.A.A.F. during the war. He is at present a teacher employed by the New South Wales Department of Education. Mr. Fry will continue his work on wages, prices, conditions and types of employment in New South Wales from 1850 onwards.

Mr. A. W. Martin (History), 25, was awarded first class honours in history by the University of Sydney in 1949. Mr. Martin is a teacher employed by the New South Wales Department of Education. Mr. Martin is interested in carrying out research into the economic bases of politics in the Australian Colonies from 1850 to 1890.

Mr. R. D. Goodman (Political Science), 35, graduated B.A. from the University of Melbourne in 1950. He completed his B.Ed. examinations in 1951 and is also a third year law student. Mr. Goodman has been a member of the Victorian Education Department since 1934. From 1940 to 1946 he was on active service. Mr. Goodman proposes to continue his work on the legal status of the teacher in the Victorian Education Department.

Research School of Pacific Studies

Mr. R. F. Salisbury-Rowswell (Anthropology), 24, graduated B.A. from Cambridge University in 1949. He completed the Anthropological Tripos in 1951. Since September, 1951, Mr. Salisbury-Rowswell has continued his work at Harvard University on the Thayer Scholarship and a Smith-Mundt Grant. Mr. Salisbury-Rowswell will study social structures of primitive communities in the Pacific area.

Mr. N. Barnard (Far Eastern History), 29, graduated B.A. from Victoria University College (New Zealand), in 1949. From 1943 to 1946 Mr. Barnard was a translator at a Prisoner of War camp in New Zealand, and in 1950 he came to Sydney to study Japanese at the University of Sydney. Mr. Barnard will study the Chun Chin period of Chinese History.

Research School of Physical Sciences

Mr. K. R. W. Brewer (Astronomy), 20, graduated B.Sc. (hons.) in Physics from the University of London in 1950. Mr. Brewer is at present working for his Master's degree. Mr. Brewer will carry out work in astrophysics. He will sail for Canberra later in the year.

Mr. K. M. Burrows (Astronomy), 24, completed his honours B.Sc. degree (in physics) at the University of Western Australia at the end of 1951. Mr. Burrows will work at Mt. Stromlo Observatory in theoretical astrophysics and stellar spectrophotometry.

Dr. E. Kondaiah (Experimental Physics), 28, graduated B.Sc. from the Benares Hindu University in 1943. In 1946 he was awarded his M.Sc. degree from Allahabad University. Since January, 1949, Dr. Kondaiah has been working at the Nobel Institute of Physics in Stockholm and was recently awarded the Doctor's degree.

Dr. Kondaiah will arrive in Canberra towards the middle of the year.

General Scholarships

Mr. K. S. Inglis, 22, graduated B.A. from the University of Melbourne with first class honours in English and History in 1950. In 1950 he was appointed a Senior Tutor in the Department of History.

Mr. Inglis will sail for England in August and will work at the University of Oxford.

Mr. L. R. P. McGlashan, 22, graduated B.A. from the University of Sydney with first class honours and the University Medal in German in 1951. Mr. McGlashan was a student at New England University College, Armidale, for the first four years of his course. He is at present a teacher in the New South Wales Education Department.

Mr. McGlashan will sail for Germany about August where he will study Romanticism in German poetry.

Mr. R. B. Mitchell, 31, graduated B.A. from the University of Melbourne in 1941. After service with the A.I.F., Mr. Mitchell completed his honours degree and in 1950 was awarded first class honours in comparative Philology.

Mr. Mitchell proposes to work at the University of Oxford where he will study English Language and Literature and also study for the Diploma in Comparative Philology.

ENROLMENTS

The following students have been admitted as students of the University.

* K. O. L. Burridge, Anthropology,
Jean I. Craig, Anthropology,
* Rosamond M. Eccles, Physiology,

C. S. Gum, Astronomy,
A. Przybylski, Astronomy,
J. R. Roach, International Relations,
* R. K. Wilson, Geography,
* P. M. Worsley, Anthropology.

Students marked * have been awarded a scholarship by the University.

It is expected that a further ten applications will come before the Board of Graduate Studies shortly.

STAFF MEMBERS

NEW APPOINTMENTS

Mr. J. S. Coombs, 34, has been appointed a Fellow in the Department of Physiology of the John Curtin School of Medical Research. Mr. Coombs graduated M.Sc. with first class honours in physics from the University of New Zealand in 1940. From 1940-49 he was a lecturer in the Department of Physics at the University of Otago. From 1950 Mr. Coombs was a part-time lecturer in physics and was also working part-time for the New Zealand Medical Research Council in the Physiology Department under Professor Eccles. Mr. Coombs, who is married with three children, will take up duty in Canberra in July.

Dr. W. E. Berry Smith, 31, has been appointed a Research Fellow in the Research School of Physical Sciences. Dr. Berry Smith graduated B.Sc. with first class honours from the University of Adelaide in 1941. In 1942 Dr. Berry Smith joined the staff of the C.S.I.R.O. and in 1947 he was awarded a C.S.I.R.O. studentship to work at the University of Birmingham. In 1950 he gained his Ph.D. While at Birmingham Dr. Berry Smith was in charge of the 60 inch cyclotron. He will arrive in Canberra towards the middle of the year.

Mr. C. C. Kratzing, 31, has been appointed a Research Fellow in the Department of Biochemistry of the John Curtin School of Medical Research. Mr. Kratzing graduated B.Sc. with honours in biochemistry in 1944 and in 1948 was awarded the M.Sc. degree. From 1943-49 Mr. Kratzing was employed as a biochemist by the Australian Institute of Anatomy at Canberra and in 1949 he was awarded a scholarship by the University to work at the University of London. He is completing his Ph.D. degree at London and will take up his new appointment on his return to Australia. Mr. Kratzing is married with two children.

Mr. K. A. MacKirdy, 31, graduated from the University of British Columbia with First Class Honours in 1947. In 1948 he was awarded his Master's degree. From 1947-49 Mr. MacKirdy was a tutor in history at the University of Toronto and from 1949-51 he was Assistant Professor of History at the University of New Brunswick. In March, 1951, he took up an appointment as Visiting Senior Lecturer in history at the University of Melbourne to lecture on American History. Mr. MacKirdy, who has been awarded a research fellowship for one year, will continue his work on "Separation Movements in Australia."

Mr. H. W. King, 41, graduated B.A. from the University of Sydney in 1930. In 1941 he was awarded his Master's degree. In 1935 Mr. King was elected a Fellow of the Royal Geographic Society. Since 1943 Mr. King has been a part-time lecturer in Economic Geography at the Canberra University College. Mr. King has taught geography in the New South Wales secondary schools for the past eighteen years. Mr. King, who has been awarded a Research Fellowship, will investigate various geographical problems of the Pacific Area.

Mr. G. R. Storry, 38, took Honours in the School of Modern History at Oxford in 1935. In 1937 he was appointed a lecturer at a commercial college in Japan. He served during the war as a Japanese interrogator and on special intelligence duties. In 1948, Mr. Storry was awarded a scholarship by the Australian National University, which he took up at the University of London in the first instance and later in Japan where he studied "The Ideas and Activities of Japanese Nationalist Associations between 1931 and 1941." Mr. Storry has been awarded a Research Fellowship and will continue his work on Japan.

Mr. K. C. Ho of Hongkong, has been appointed Librarian in Charge of Oriental Books and Manuscripts in the University Library. Mr. Ho, together with his wife and two daughters, will arrive in Canberra towards the middle of the year.

NEWS AND MOVEMENTS

Professor J. C. Jaeger (Geophysics) took up duty in Canberra on 18th January.

Mr. A. F. Bunker, Laboratory Manager of the John Curtin School of Medical Research, returned to Canberra from the United Kingdom on 3rd February to take up residence. While overseas Mr. Bunker visited the United States to inspect laboratories.

Professor P. A. Moran, who was recently appointed to the Chair of Statistics in the Research School of Social Sciences sailed from the United Kingdom on 2nd February. Professor Moran together with his wife and two children is expected to arrive in Canberra in March.

Professor E. W. Titterton was recently elected a Fellow of the Royal Society of Arts.

Mr. E. H. Clark, who has been the University's Administrative Officer in the United Kingdom for nearly three years, returned to Canberra early in February to take up duty as an Assistant Registrar. Mr. Clark has now accepted a position as Librarian of the University of Malaya and is expected to sail for Singapore late in April.

Professor W. R. Crocker (International Relations) delivered the Second Roy Milne Memorial Lecture in Melbourne on 28th November. The lecture, given under the auspices of the Australian Institute of International Affairs, was entitled "Can the United Nations Succeed?"

Professor Raymond Firth, accompanied by his Research Assistant, ***Mr. J. Spillius,*** left Canberra on 14th February to carry out field work at Tikopia in the British Solomon Islands. Professor Firth expects to return to Canberra in June.